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March 13, 2009

Marlene H. Dortch  
Secretary  
Federal Communications Commission  
445 12<sup>th</sup> Street, S.W.  
Washington, D.C. 20554

Re: Ex Parte Meeting -- GN Docket No. 09-29

Dear Ms. Dortch:

Earlier today, Gary Bolton and Mark Ogden of ADTRAN, Inc., along with me, met with Julius Knapp, Ron Repasi and Walter Johnston of the Office of Engineering and Technology. We generally discussed issues related to broadband access technologies. The presentation centered on the attached slides, which were handed out at the meeting.

Because the discussions touched on the subject of an open proceeding concerning the development of a Rural Broadband Strategy, in accordance with Section 1.1206 of the Commission's Rules a copy of this notice is being filed via the Electronic Comment Filing System in the docket for the above-captioned proceeding. Please contact the undersigned if you have any questions with regard to this matter.

Sincerely,

/s/

Stephen L. Goodman  
Counsel for ADTRAN, Inc.

cc: Julius Knapp  
Ron Repasi  
Walter Johnston

# **Broadband Access Technology**

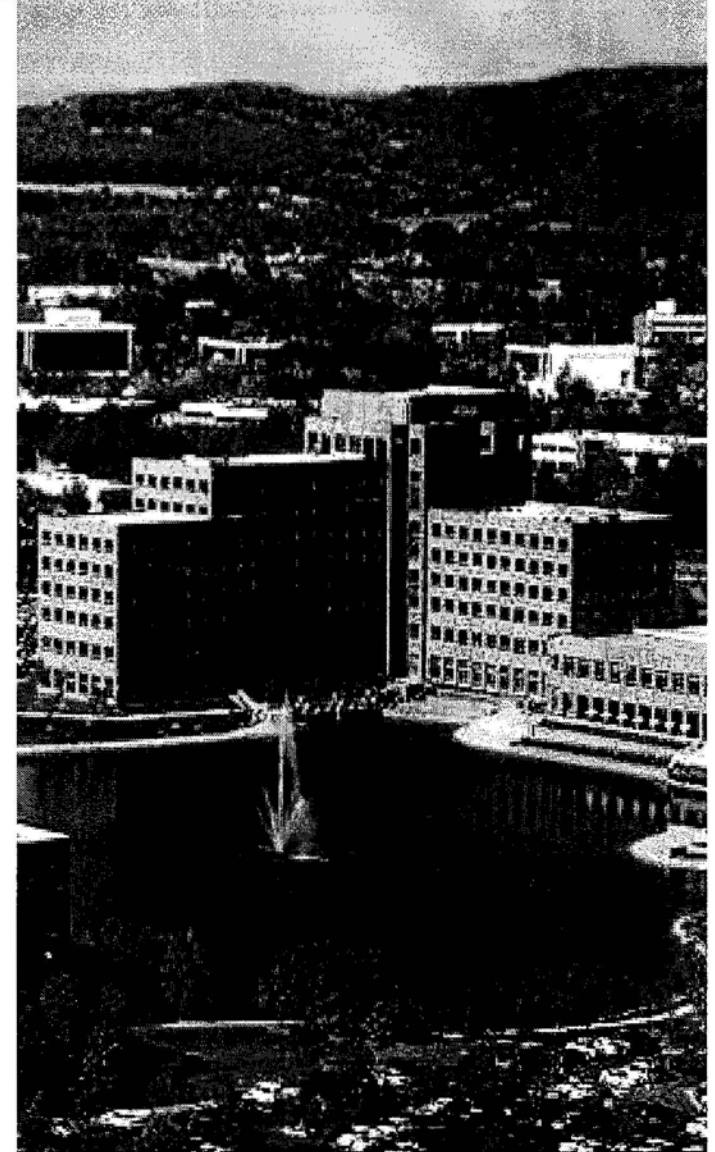
***More Broadband per Stimulus Dollar \$***

**March 13, 2009**



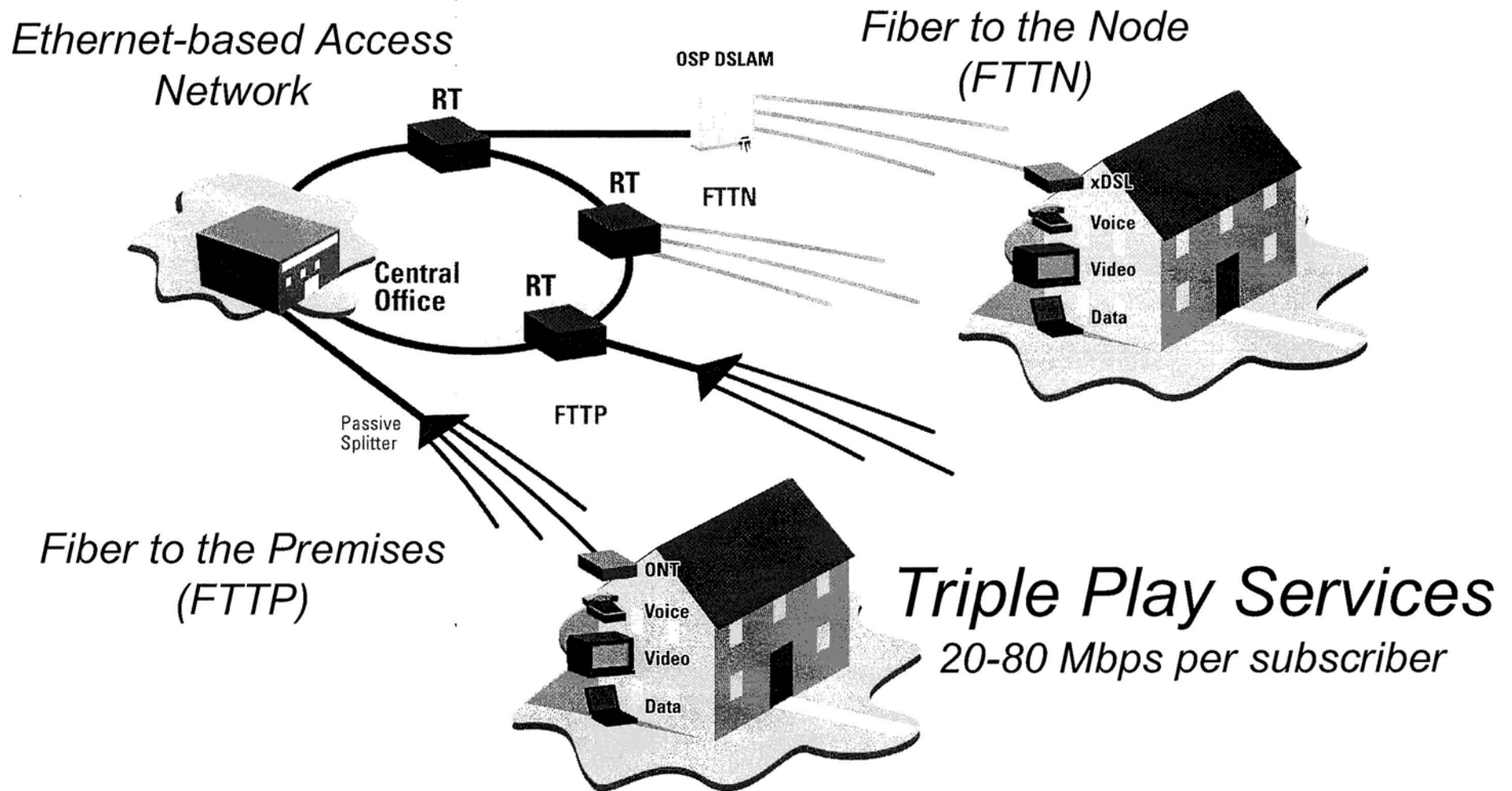
# Company Overview

- **Reliable access for today's communications networks**
  - Comprehensive product portfolio > 1,700 products
  - 2008 revenue - \$501 million
  - 2008 Product Development Investment - \$82M
  - 1,600 employees
- **Broadband Market Leadership**
  - #1 Supplier of High-Bit-Rate DSL (HDSL) Equipment
  - #2 DSL Equipment Supplier in North America
  - #1 Supplier of Fiber-To-The-Node Sealed Outside Plant DSLAMs
  - #2 Routers, Ethernet Switches, IP Business Gateways
- **American Born and Bred**
  - Headquartered in Huntsville, AL
  - US Manufacturing – Huntsville, AL
- **Traded on NASDAQ: ADTN**
  - Strong Balance Sheet
  - 20 year history of continuous profitability



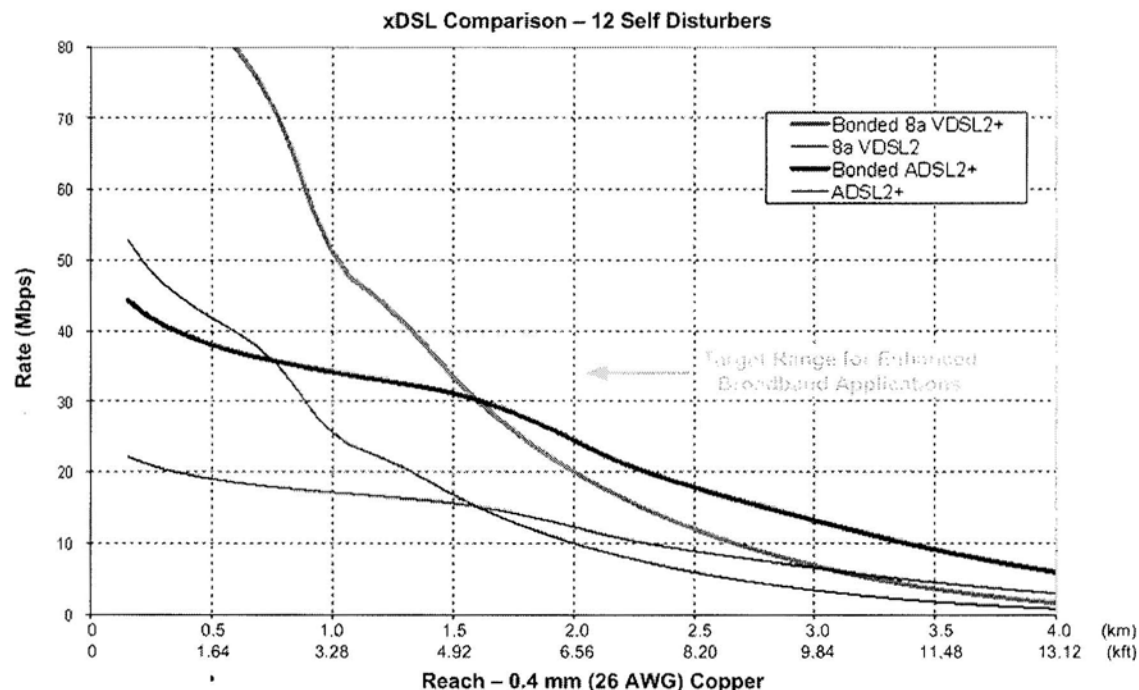
- Fiber to the Home Council
  - Current chair of Marketing Committee
- Broadband Forum (formerly DSL Forum)
  - Current chair of VDSL2 performance spec
- ATIS
  - Current Board Member
- IEEE (802.1, 802.3, 802.17)
  - Current chair of the RPR effort, former editor of EFM ESHDSL
- ITU
  - Editor of SHDSL standard
  - Editor of ERPS (G.8032)
- FSAN
  - G.984 GPON
- Metro Ethernet Forum (MEF)
- IETF





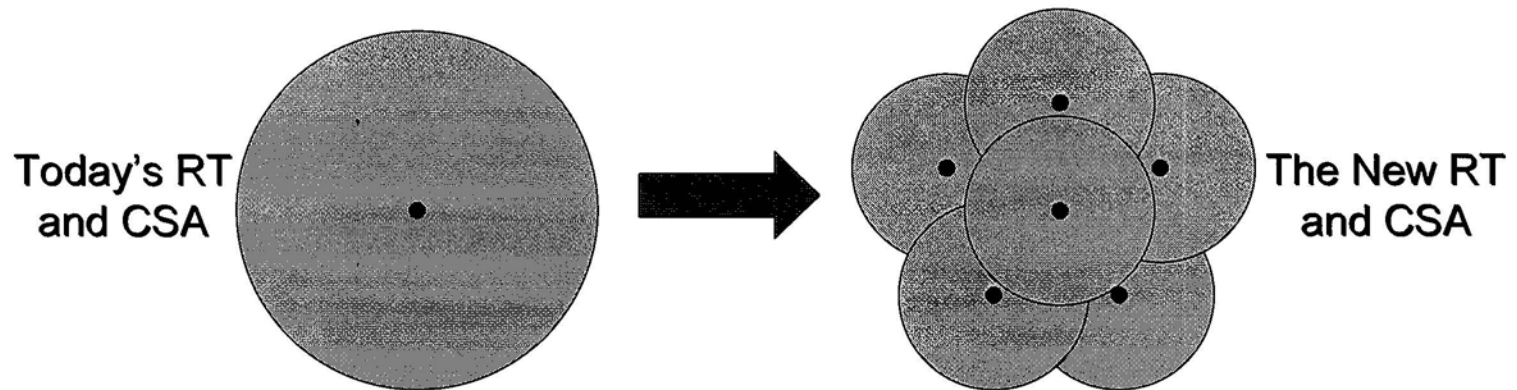
# Which Architecture is Right?

- Studies show that as much as 70% of the cost of a Brownfield conversion from copper to fiber in last 3000'
- Industry agrees that fiber is the ultimate destination
- FTTN shorten the copper loop to cost effectively to deliver the bandwidth needed at the home



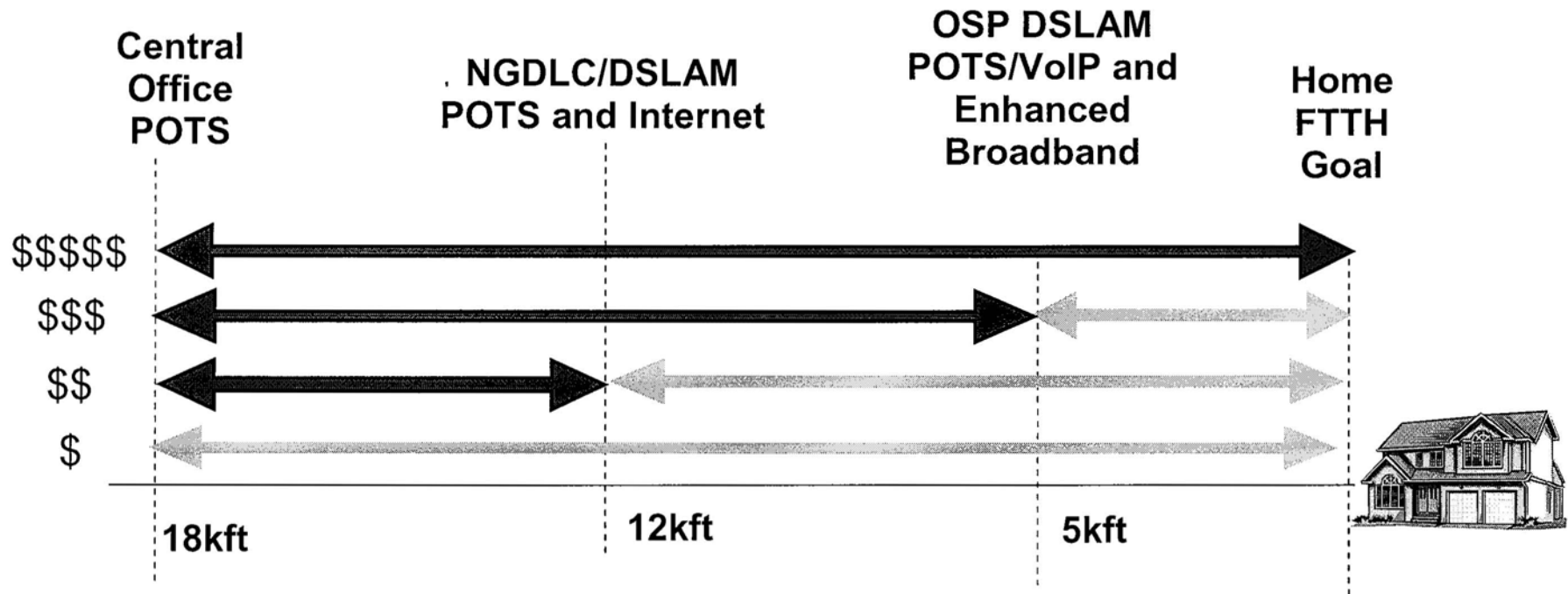
Most services require increased bandwidth

- As bandwidth requirements increase, loop length is reduced
- The existing DSLAM footprint must be augmented to compensate for these reduced loop lengths
  - Drives the need for an economical OSP DSLAM Solution (FTTN)





# Incremental Fiber Transition Strategy

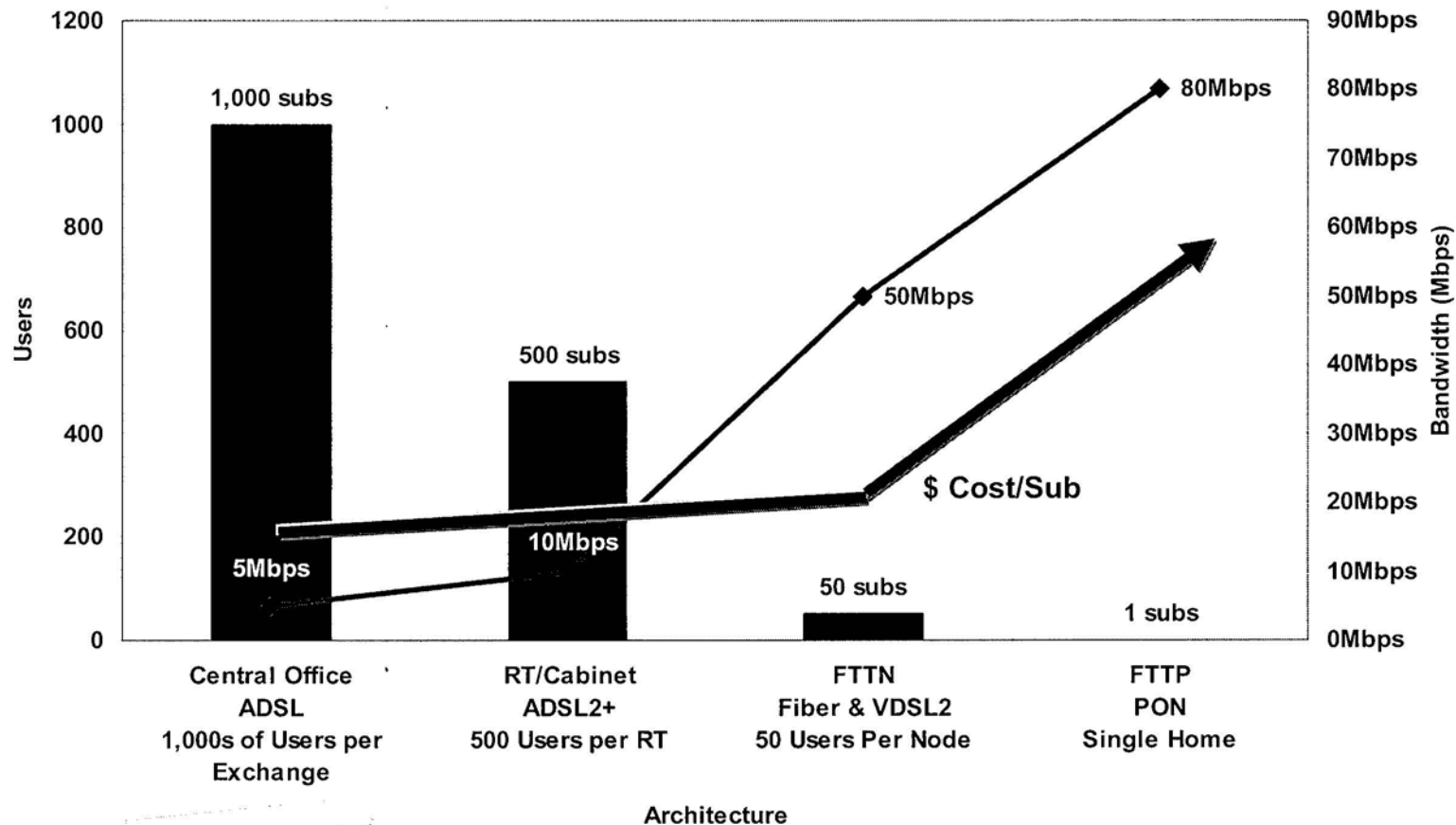


***More bandwidth... more flexibility...Next Gen services***



Users  
 Broadband Speed

## Wireline Broadband



Architecture



# Residential Broadband

## *Coverage versus Capability*

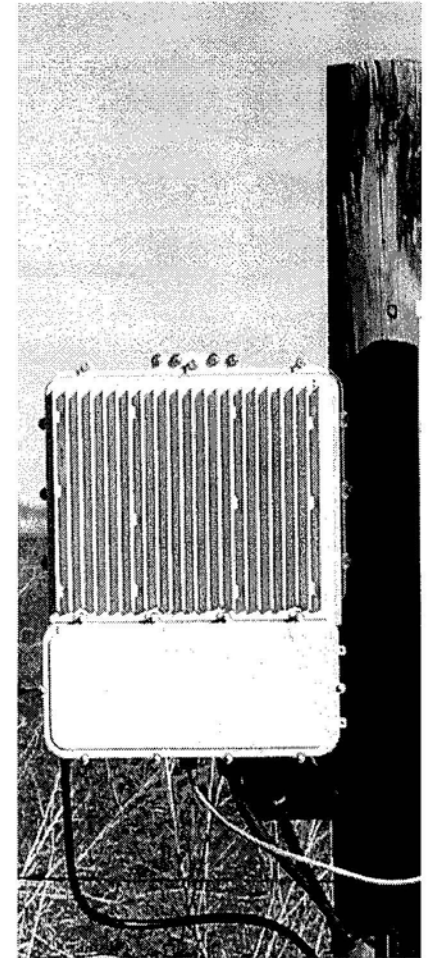
- CO DSLAM
  - Good choice for high-density areas with concentrated population centers
- FTTN
  - Best combination of bandwidth capability for the coverage
- FTTP
  - Best bandwidth capability on the market but requires significant investment and coverage over a subscriber area is limited to where fiber is deployed

Architecture	Bandwidth		Timeliness / Coverage	Cost per Subscriber
	Down	Up		
<b>CO DSLAM</b>				
ADSL	10M	1M	Quick / 50% of a wire center	\$
ADSL2+	20M	2.5M	Quick / 30% of a wire center	\$
VDSL2	50M 25M	10M 3M	Quick / 15% of a wire center	\$\$
<b>FTTN</b>				
ADSL2+	20M	1M	Add time for fiber feeder but re-usable / Cover 100% of Wire center	\$\$
VDSL2	50M 25M	10M 3M	Add time for fiber feeder but re-usable / Cover 100% of Wire center	\$\$\$
<b>FTTP</b>				
GPON	80M	40M	Depends on fiber deployments	\$\$\$\$\$



## Sealed Fiber To The Node (FTTN)

- Innovative sealed design
  - Scales up to 192 total ports
  - Multiple powering options
- Cookie cutter approach simplifies installation
  - First port turn-up costs are greatly minimized
  - Works for every RT site regardless of the existing DLC
  - Leverages investments already made in power/batteries
- Eliminate noise created by fans/heat exchangers by using passively cooled OSP DSLAMs
- Can be integrated into cross-connect augments when adding capacity at sites





# Deployment Costs of Cabinet vs. FTTN

- Deployment is greatly simplified using OSP DSLAMs
  - No new right of way
  - No new pad work
  - Significantly lower shipping costs
  - Installation doesn't require a crane
  - Smaller crew onsite for installation
  - No expensive heat exchanger solutions
  - Lower power requirements
- Electronics costs keep falling but total deployment costs aren't getting any cheaper
  - Metal (i.e. cabinets) keeps climbing
  - Lower density areas can't prove in due to initial circuit costs

DEPLOYMENT COSTS OF CABINET vs. 1100 SERIES		
Item Description	Cabinet DSLAM	Total Access 1100 Series
Cost of Cabinet	\$\$\$	None
Cabinet Protection and Wiring	\$\$	Integrated
Power System with Batteries	\$\$	\$ (span powering)
Power Pedestal	\$	None
Concrete Pad and Pad work	\$\$	None
Labor Cost	\$\$	\$
Cost of Crane	\$	None
Permits and Right of Way	\$\$	None
Site Prep	\$\$	None
Shipping	\$\$	\$
Solutions Engineering	\$\$\$	\$\$
Deployment Speed	Construction can take more than a month	1 day
Revenue Losses Due to Installation Delays for Construction	Variable	None
Cost of Land Purchase or Lease	Variable	None
Total Deployment Cost	\$25,000-\$35,000	\$5,000-\$7,000
*Deployment costs only. Cost of the electronics are not included.		

- “Unserved” communities should have grant priority
  - Get broadband to all Americans
  - Deploy the maximum broadband subs per stimulus dollar \$
- Allow Service Providers to draw from a full tool box of broadband solutions to best address target serving areas
  - DSLAMs, Remote DSLAMs, FTTN, FTTP
  - Broadband speed definitions will dictate solution
- “Buy American” provision was intended to ensure that the maximum number of jobs were created in the United States, and the broadband grant and loan programs should honor that intent.





Smart Solutions for a  
Connected World.

